



I-MON USB

Interrogation monitors for FBG sensor systems

High-resolution spectrometers ideally suited for a broad range of FBG sensing applications through a unique combination of high resolution, high speed, broad wavelength range and compact size

The I-MON 256/512 USB Interrogation Monitors offer kHz spectrum monitoring of Fiber Bragg Grating (FBG) sensors. High spectrometer resolution combined with broad wavelength range provides high resolution interrogation monitors allowing measurement of a large number of FBG sensors. High sensitivity allows high resolution also at very low light levels.

USB interface and data acquisition software provides easy setup with a laptop, and the I-MON can act as a stand-alone monitor in combination with a customer-selected light source. Additionally the I-MON USB Interrogation Monitors offer straightforward integration with the customer's interrogation system control PCB and meet industrial qualification standards.

Features
High measurement frequency
Broad wavelength ranges
High resolution
Large dynamic range
Compact size
No moving parts

Applications
Stand-alone Interrogation monitor and/or
OEM Interrogation monitor modules:
- Vibration analysis
- Temperature measurements
- Pressure monitoring
- Strain measurements

I-MON software

The I-MON USB comes with LabVIEW based software providing plug-and-play operation. Driver software packages and DLL files allow the user to develop own measurement applications for OEM integration.

Operating principle

The Ibsen I-MON Interrogation Monitors build on patented (*) Ibsen high-resolution spectrometer technology, utilizing Ibsen fused silica transmission gratings. The I-MON splits the wavelength spectrum spatially to allow for

parallel processing of the individual FBG sensor peaks. The FBG sensor peaks are measured by a diode array, and the embedded electronics provides USB interface.

(*) US patents no's.: 6,842,239 and 6,978,062

About Ibsen Photonics

Ibsen Photonics is building its portfolio of high resolution spectrometer modules on more than 20 years of experience in diffractive optics. Ibsen Photonics also has a leading position within phase masks for FBG manufacturing, holographic fused silica transmission gratings, and spectrometers.

Ibsen Photonics welcomes partnerships with original equipment manufacturers based on the Ibsen high resolution spectrometer technology. Ibsen Photonics is a privately held company.

Specifications

Parameter	Unit	I-MON 256 USB	I-MON 512 USB
Wavelength range	nm	1525-1570	1275-1345 / 1510-1595
Max no. of FBG's and spacing		> 37 at 1200 pm	>70 at 1000 pm / >70 at 1200 pm
Wavelength fit resolution	pm		< 0.5
Repeatability (over any pol state)	pm		3 (5 max.)
Wavelength linearity	pm		5 (typ.)
Wavelength drift	pm/°C		1 (3 max.)*
Dynamic range	dB		30
Input optical power range	dBm		-80 to -20
Measurement frequency	Hz	6000	3000
Interface			USB 2.0
Current consumption	mA		< 250 **
Temperature range	°C		0 - 50
Size	mm		110 x 94 x 49

(*) Note that by applying temperature control or temperature correction the wavelength accuracy over the entire temperature range can be improved.

(**) USB bus power.

Specifications are subject to change without prior notice. Design and specifications can be modified to suit a range of customer requirements.